

299-E27-133 (A6753) Log Data Report

Borehole Information:

Borehole: 299-E27-133 (A6753)			Site: 216-C-1 Crib		
Coordinates (WA St Plane)		GWL¹ (ft): None	GWL Date: 05/25/06		
North (m)	East (m)	Drill Date	Top of casing Elevation (ft)	Total Depth (ft)	Type Cable
136307.715	574584.807	09/82	689.55	50	

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Welded Steel	2.0	8 5/8	8	5/16	2.0	50

Borehole Notes:

Casing diameter and casing stickup measurements were acquired by the logging engineer using a caliper and steel tape. Measurements were rounded to the nearest 1/16 in. Grout is reported to exist around the top 20 ft of casing and as a plug at the bottom of the borehole from 50 to 52 ft.

Logging Equipment Information:

Logging System: Gamma 1N		Type: SGLS (60%) SN: 45-TP22020A	
Effective Calibration Date: 04/05/06	Calibration Reference: DOE/EM-GJ1183-2006		
		Logging Procedure: MAC-HGLP 1.6.5, Rev. 0	

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2 Repeat	3 Repeat		
Date	05/25/06	05/25/06	05/25/06		
Logging Engineer	McClellan	McClellan	McClellan		
Start Depth (ft)	49.0	36.0	15.0		
Finish Depth (ft)	3.0	30.0	10.0		
Count Time (sec)	100	100	100		
Live/Real	R	R	R		
Shield (Y/N)	N	N	N		
MSA Interval (ft)	1.0	1.0	1.0		
ft/min	N/A ²	N/A	N/A		
Pre-Verification	AN027CAB	AN027CAB	AN027CAB		
Start File	AN028000	AN028048	AN028055		
Finish File	AN028047	AN028054	AN028060		
Post-Verification	AN028CAA	AN028CAA	AN028CAA		
Depth Return Error (in.)	- 0.5	N/A	0		
Comments	No fine gain adjustment.	No fine gain adjustment.	No fine gain adjustment.		

Logging Operation Notes:

Logging was conducted with a centralizer on the sonde. Logging data acquisition is referenced to the top of casing. Repeat sections were collected from 30 to 36 ft and from 10 to 15 ft in this borehole to evaluate system performance.

Analysis Notes:

Analyst:	Henwood	Date:	10/11/06	Reference:	GJO-HGLP 1.6.3, Rev. 0
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Pre-run and post-run verifications for the logging system were performed before and after the day's data acquisition. The acceptance criteria were met.

A casing correction for 0.3125-in.-thick casing was applied to the log data.

SGLS spectra were processed in batch mode using APTEC SUPERVISOR to identify individual energy peaks and determine count rates. Concentrations were calculated with an EXCEL worksheet template identified as G1NApr06.xls using efficiency functions and corrections for casing, water, and dead time as determined from annual calibrations.

Results and Interpretations:

¹³⁷Cs is the only man-made radionuclide detected in this borehole. ¹³⁷Cs is detected from 3 to 21 ft and from 30 to 45 ft. The maximum concentration was measured at approximately 92 pCi/g at 12 ft.

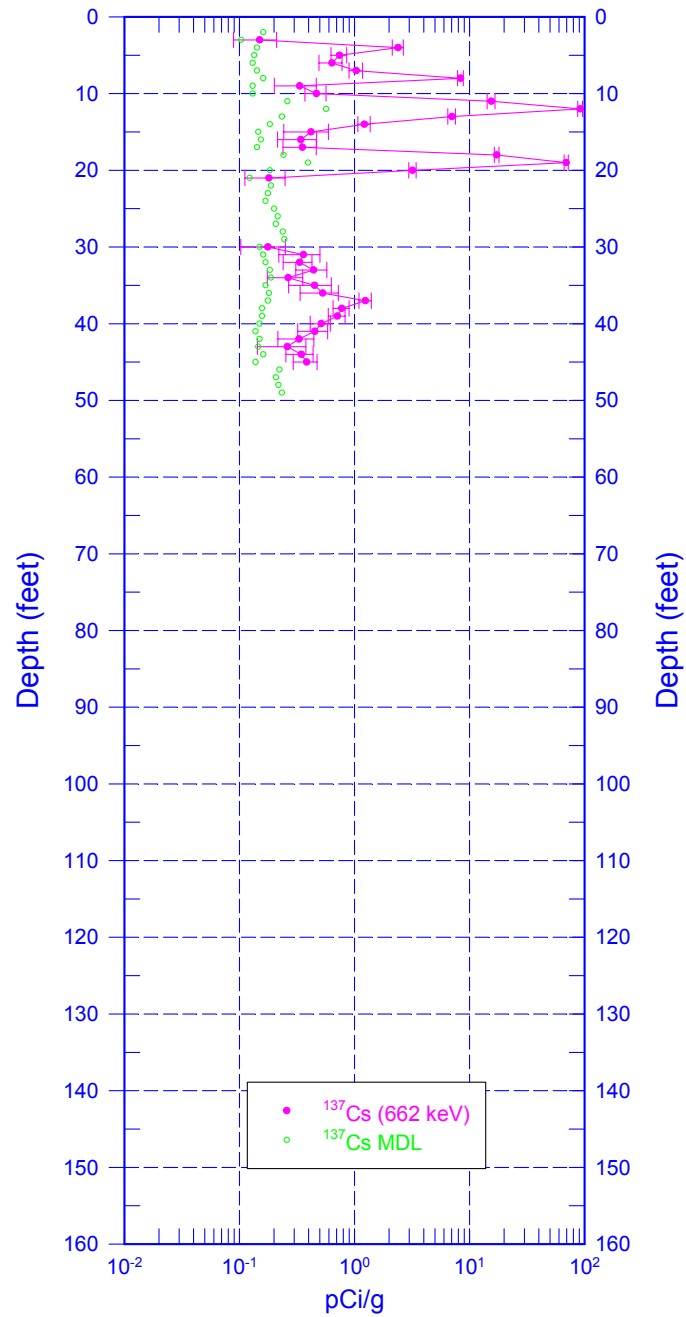
The repeat section indicates good agreement of the naturally occurring KUT and ¹³⁷Cs concentrations.

List of Plots:

Depth Scale: 1" = 20 ft
Manmade Radionuclides
Natural Gamma Logs
Combination Plot
Total Gamma and Dead Time
Repeat of Manmade Radionuclides
Repeat Section of Natural Gamma Logs

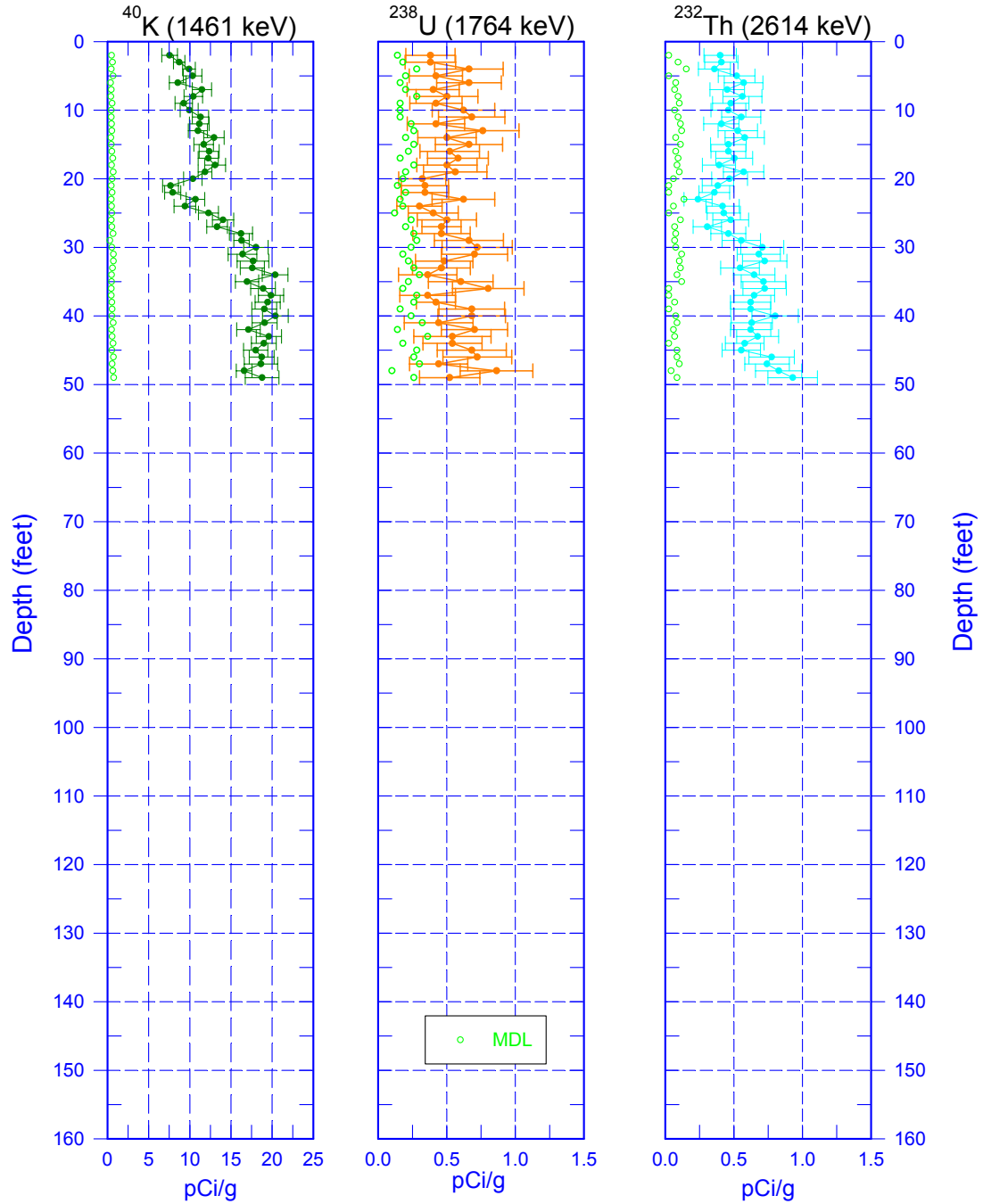
¹ GWL – groundwater level

299-E27-133 (A6753) Manmade Radionuclides



Zero Reference - Top of Casing

299-E27-133 (A6753) Natural Gamma Logs



Zero Reference = Top of Casing

299-E27-133 (A6753) Combination Plot

Depth (feet) is shown on the y-axis, ranging from 0 to 120 feet.

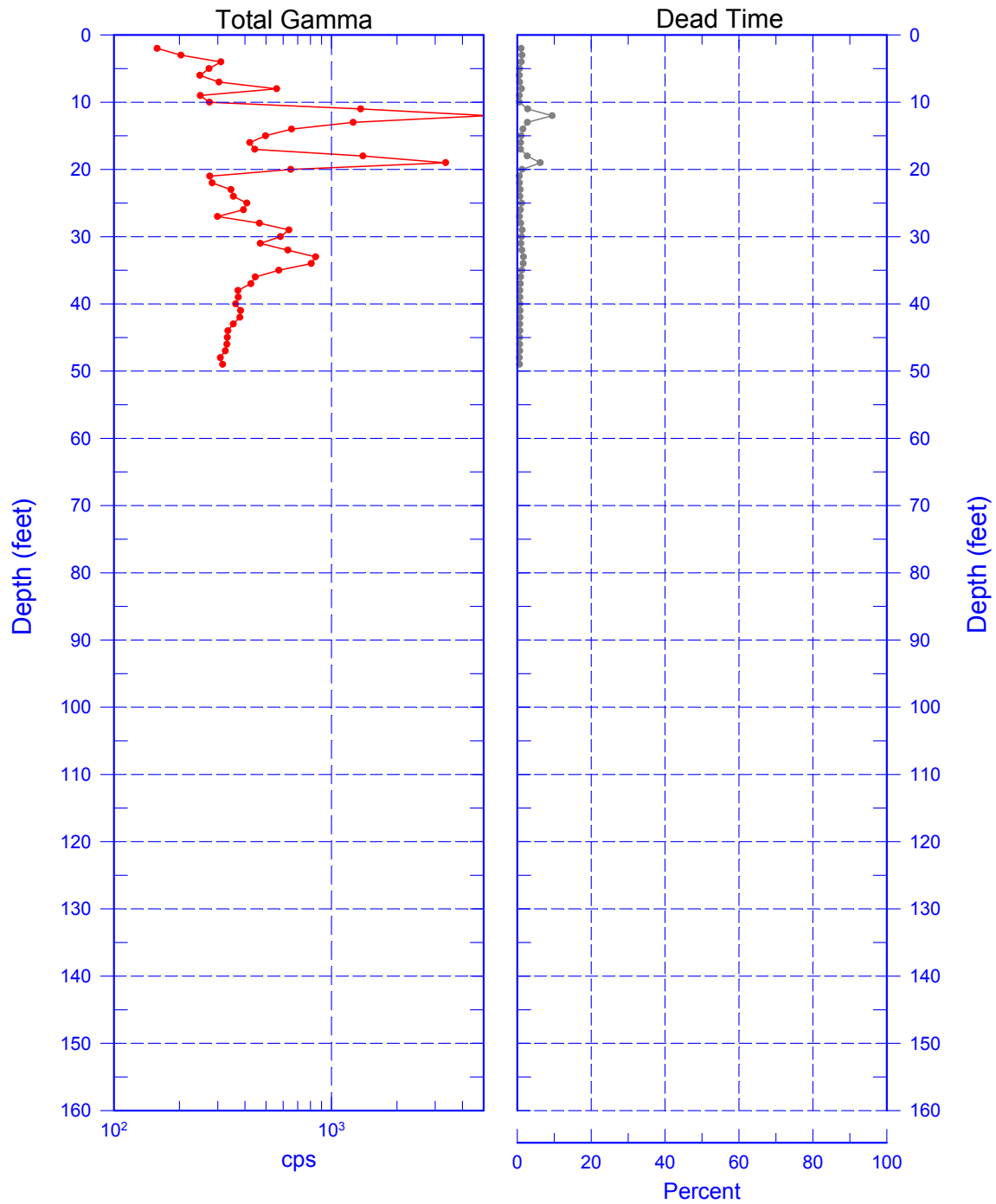
The x-axes represent activity concentrations:

- Manmade Radionuclides:** pCi/g (log scale, 10^{-2} to 10^2)
- ^{40}K (1461 keV):** pCi/g (linear scale, 5 to 25)
- ^{238}U (1764 keV):** pCi/g (linear scale, 0.0 to 1.5)
- ^{232}Th (2614 keV):** pCi/g (linear scale, 0.0 to 1.5)
- Total Gamma:** cps (log scale, 10^2 to 10^4)
- Dead Time:** percent (linear scale, 0 to 100)

A legend indicates ^{137}Cs (662 keV) in pink.

Zero Reference - Top of Casing

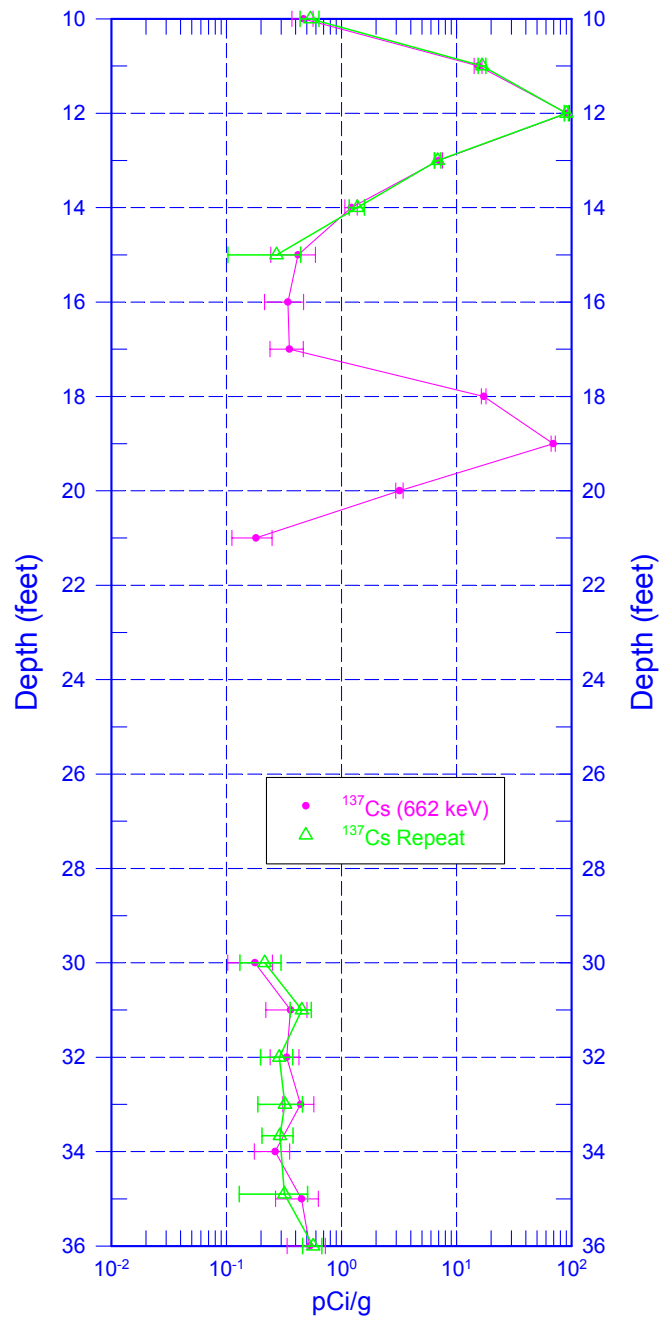
299-E27-133 (A6753) Total Gamma & Dead Time



Reference - Top of Casing

299-E27-133 (A6753)

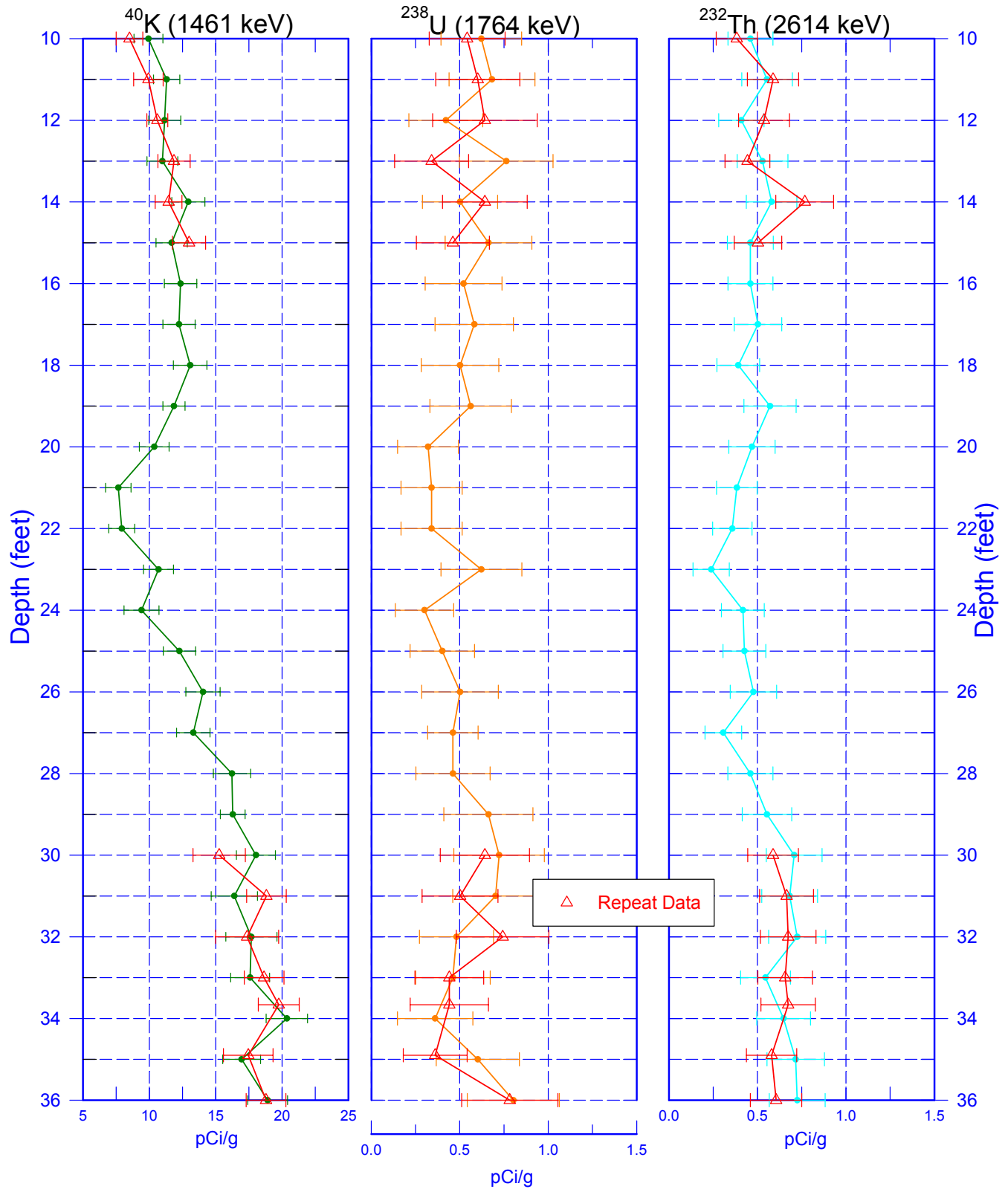
Repeat of Manmade Radionuclides



Zero Reference - Top of Casing

299-E27-133 (A6753)

Repeat Section of Natural Gamma Logs



Zero Reference - Top of Casing